

VARIABLE FILTER USING FLUID DIELECTRIC

ABSTRACT

A variable RF filter (102) which includes one or more filter elements (104,106). The filter elements (104,106) can be formed from a structure selected from the group consisting of stripline, microstrip, and buried microstrip. A fluid dielectric (108) and a fluid control system (150) for selectively moving the fluid dielectric from a first position to a second position are provided. In the first position, the fluid dielectric (108) is electrically and magnetically coupled to the filter elements (104,106) to produce a first filter response. In the second position, the fluid dielectric (108) is electrically and magnetically decoupled from the filter elements (104,106) to produce a second filter response distinct from the first filter response. The first position can be defined by a bounded region located adjacent to the filter elements (104,106) and the second position is defined by a fluid storage reservoir (170).